S
333.91
E12rwp
1996
C. 1

Montana
Environmental
Quality Council
Report on water
policy to the 55th
Legislature

Report on Water Policy
to the *55th* Legislature

STATE DOCUMENTS COLLECTION

FEB 2 1997

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

Environmental Quality Council
December 1996

MONTANA STATE LIBRARY
3 0864 0009 9204 3

Environmental Quality Council

House Members: Representative Bill Ryan, Representative Scott Orr, Representative Dick Knox, Representative Bill Tash, Representative Vicki Cocchiarella, Representative Debbie Shea

Public Members: Gregory Tollefson, Jerry Noble, Jeanne-Marie Souvigney, Jerry Sorensen

Senate Members: Senator William Crismore, Senator Lorents Grosfield, Senator Ken Mesaros, Senator Vivian Brooke, Senator Jeff Weldon, Senator Steve Doherty

Governor's Representative: Glenn Marx

EQC Staff: Todd Everts, Legislative Environmental Analyst, Martha Colhoun, Resource Policy Analyst, Larry Mitchell, Resource Policy Analyst, Kathleen Williams, Resource Policy Analyst, Maureen Theisen, Research Assistant

TABLE OF CONTENTS

Introduction 1

Background 2

Statutory Duties 3

Additional Issues 8

Appendix 1: Renewable Resource Grant & Loan Program

Funding recommendations A-1

Appendix 2: Water Resources Center

List of projects A-4

Advisory committee members A-6

Drinking Water Assistance Center information A-7

Report to the EQC A-8

Drinking Water Committee members A-9

Appendix 3: Montana Water Information System

Report to the EQC A-10

Appendix 4: DFW&P 1996 Water Leasing Report A-23

Appendix 5: HB 472 Instream Flow Working Group

Summary of October 31 meeting A-40

Working group members A-43

Leasing Water Rights to Benefit Fisheries brochure A-44

INTRODUCTION:

This is the first biennial report to the Montana Legislature regarding water policy prepared by the Environmental Quality Council (EQC). The Water Policy Committee prepared its first biennial Water Policy Report to the Montana Legislature in 1985, and prepared four thereafter. The 1995 Montana Legislature then eliminated the Water Policy Committee and transferred its responsibilities to the EQC. The EQC is a 17-member, bipartisan committee that provides timely and authoritative information on the trends and conditions in the quality of Montana's environment, including the trends and conditions in water policy.

During the 1996 legislative interim, the Environmental Quality Council (EQC) looked at a number of water policy issues. Montana statutes charge the EQC with the responsibility of analyzing and commenting on four specific water policy issues: the state water plan, the renewable resources grant and loan program, water-related research, and the water resources data management system. Through presentations by agency experts and the ensuing discussion, the EQC fulfilled its statutory duties. In addition to its statutory responsibilities, the EQC can choose to study other timely water policy issues. This interim, the EQC chose to analyze instream flows and water leasing.

This report sets forth the EQC's activities during the 1995-96 legislative interim regarding water policy. It covers the EQC's analysis and comments on its four statutory responsibilities and the EQC's discussions regarding instream flows and water leasing. The brevity of this report is a testament to how some of the mechanisms for studying and implementing statewide water policies are in place and operating on their own. The EQC's function this interim was largely one of legislative oversight. The EQC's water policy oversight was interdisciplinary; the compliance and enforcement subcommittee and the indicators subcommittee also addressed pertinent water policy issues.

BACKGROUND:

In 1985, the Montana Legislature established a permanent Water Policy Committee to advise the legislature on the adequacy of Montana's water policy; to oversee the effect of state executive agencies' policies and activities on water resources; to communicate with the public regarding the state's water resources; and to analyze and comment on the state water plan, the water development program, water-related research, and the water resources data management system.

During its first legislative interim, the Water Policy Committee produced a report emphasizing the need for comprehensive and coordinated water management. The report suggested that water management be based on scientific study, sound policy-making, and informed public participation. In its ensuing ten years, the Water Policy Committee produced seminal reports and facilitated many of the water policy structures now in place.

In reorganizing the legislative branch, the 1995 Legislature subsequently eliminated the Water Policy Committee and transferred the Committee's duties to the Environmental Quality Council. The EQC decided not to create a subcommittee for the 1995-96 interim to address water policy issues but instead chose to have the Council as a whole address these issues. In choosing not to create a subcommittee on water policy, the EQC reasoned that many of the mechanisms that the Water Policy Committee had worked to develop were in place and facilitating their own dialogues. Therefore, the EQC's role in water policy during the 1995-96 interim was one of legislative oversight.

Section 85-2-105, MCA sets forth the EQC's current water policy duties. These duties include: analyzing and commenting on the state water plan; 2) analyzing and commenting on the renewable resource grant and loan program report; 3) analyzing and commenting on water-related research; and 4) analyzing, verifying, and commenting on the adequacy of and information contained in the water resources data management system. Additionally, during the 1995-96 interim, the EQC looked into water policy issues that last interim's Water Policy Committee recommended for further study, such as instream flows and water leasing.

STATUTORY DUTIES

1. State Water Plan

Section 85-2-105(3), MCA, requires the EQC to:

> (a). . . analyze and comment on the state water plan required by 85-1-203, [MCA] when filed by the department . . .

Background

From 1987 to 1994, the Department of Natural Resources and Conservation (DNRC) used a tightly structured planning process to develop sections of a statewide water plan. The process consisted of a governor-appointed Water Plan Advisory Council (WPAC), public meetings to identify relevant issues for study, broad-based steering committees appointed by the WPAC to analyze the identified issues, public hearings on the steering committee and WPAC recommendations, and Board of Natural Resources and Conservation adoption of the final plan sections. In the past, the water planning process looked at the following issues: instream flow, water storage, and the connection between water quantity and water quality.

The DNRC decided that during the 1993-1994 interim, instead of analyzing a specific water issue, it would analyze the process itself and therefore created the State Water Plan Review Working Group. Using extensive public involvement, the review working group produced a 17-point decision summary outlining suggestions on the state water plan process. The DNRC approved the 17-point decision summary regarding the water plan evaluation and the Water Policy Committee endorsed this document and the implementing legislation during the 1995 session. The legislation, HB 192, failed. However, its concept of removing the Board of Natural Resources and Conservation (BNRC) from the state water planning process was in effect approved by the passage of SB 234 that eliminated the BNRC altogether.

Council Action

During the 1995-96 interim, Rich Moy, Chief of the DNRC's Water Management Bureau gave the EQC an update on the State Water Plan and the DNRC's activities regarding water policy. In his presentation, Rich Moy noted that the Water Management Bureau did not compile a state water plan this interim, but instead concentrated its efforts on assisting local watershed groups in solving their problems.

Some of the Water Management Bureau's efforts include: staff assistance for the Bitteroot Water Forum, the Upper Clark Fork Steering Committee, the Ruby River Management Plan, and Musselshell water quality issues; surface flows and surface and ground water studies on the Beaverhead river; development of rural water supply systems; and many other projects. Because there is no water advisory board, DNRC staff was able to support local watershed groups. In addition to providing staff assistance for local projects, the DNRC supports the Montana Watercourse in Bozeman. The Watercourse's mission is to provide objective information and workshops to local watershed groups to help the groups solve problems.

Rich Moy's presentation at the September 14-15, 1995 EQC meeting fulfilled the EQC's duty to analyze and comment on the state water plan.

2. Renewable Resource Grant and Loan Program

Section 85-2-105(3), MCA, requires the EQC to:

> (b) analyze and comment on the report of the status of the state's renewable resource grant and loan program required by 85-1-621, [MCA] when filed by the department . . .

Montana's Renewable Resource Grant and Loan Program states:

> **85-1-602. Objectives.** (1) The department shall administer a renewable resource grant and loan program to enhance Montana's renewable resources through projects that measurably conserve, develop, manage, or preserve resources. Either grants or loans may be provided to fund the following:
> (a) feasibility, design, research, and resource assessment studies;
> (b) preparation of construction, rehabilitation, or production plans; and
> (c) construction, rehabilitation, production, education, or other implementation efforts.
> (2) Projects that may enhance renewable resources in Montana include but are not limited to:
> (a) development of natural resource-based recreation;
> (b) development of offstream and tributary storage;
> (c) improvement of water use efficiency, including development of new, efficient water systems, rehabilitation of older, less efficient water systems, and acquisition and installation of measuring devices required under 85-2-113; and development of state-tribal, state-federal, and state-tribal-federal water projects; and
> (d) advancement of farming practices that reduce agricultural chemical use.
> (3) The renewable resource grant and loan program is the key implementation portion of the state water plan and must be administered to encourage grant and loan applications for projects designed to accomplish the objectives of the plan.

The DNRC is required to submit a copy of the report to the EQC, formerly the Water Policy Committee. The Council must analyze and comment on the report when filed by the DNRC.

Background

Originally, the DNRC filed its report just prior to legislative sessions, after the Water Policy

Committee had concluded its interim business. For this reason, historically, the Committee did not analyze or comment on the report.

The 1991-92 Water Policy Committee recommended in its report to the 52nd Legislature that the DNRC submit its draft report to the Committee at an earlier date. The DNRC complied with this request and submitted a draft report to the Committee at its October, 1994 meeting. The Committee recommended that next interim's Committee, now the EQC, continue to work towards efficient and earlier participation in the review and prioritization process.

Additionally, the Committee remained concerned about the continued use of trust funds, through the grant process, to fund general operating expenses of state agencies. The Committee recommended that the 1995-96 Committee address this issue if the 1995 Legislature did not take substantive action. HJR 28, which requested a study of RIGWAT issues, failed during the 54th Legislature.

Council Action

John Tubbs from the Department of Natural Resources and Conservation updated the EQC on the status of the renewable resources grant and loan program. He presented the list of grant requests, their order of priority, the total project cost, the grant request, the recommended grant funding, the cumulative grant funding, and the loan funding requested. This list is included as **Appendix 1.** In addition, the Legislative Finance Committee, along with the EQC, appointed a four-person subcommittee to analyze the potential issues arising with Resource Indemnity Trust funding shortfalls. The subcommittee made recommendations on the following: 1) narrow uses of RIT interest and proceeds to specific purposes; 2) amend statutes to include specific uses of RIT funds, and de-earmark the remaining revenues; 3) alleviate cash flow problems; 4) change the method of presenting RIT revenue and expenditure information to the legislature; 5) use of proceeds; 6) oil and gas well bonding; and 7) minor statutory cleanup.

John Tubbs' presentation, the subcommittee's actions, and the ensuing discussion fulfilled the EQC's statutory responsibility for analysis and comment on the renewable resource grant and loan program.

3. Water Research

Section 85-2-105(3), MCA, requires the EQC to:

> (c) analyze and comment on water-related research undertaken by any state agency, institution, college, or university . . .

Background

Water Resources Center

In 1988, the Water Policy Committee recommended that the university system restructure the

Water Research Center at Montana State University to provide better services in water research and education on water issues and to improve communication with water users.

The Water Policy Committee closely followed the Montana University System's restructuring of the Water Resources Center during the 1993-94 interim. Dorothy Bradley, the Water Center director, briefed the Committee on her plans for continuing the Water Center's renewal. She said that a useful Water Center will be one that provides a valuable interface between academic and other elements of society and also acts as a "switchboard" for water-related research. Ms. Bradley said her goal was "to help make Montana become a place where responsible citizens make decisions based on knowledge. This is the best way to ensure we remain stewards of our future."

Montana Watercourse

The Montana Watercourse is a statewide water education program started in 1989 and centered at Montana State University. The goal of the Watercourse program is to promote and facilitate the awareness of Montana's water resources and related issues through the development of special workshops, learning materials, conferences, activities, and reference guides. The Watercourse emphasizes public understanding of the importance of water to all user groups and the belief that Montana's future social and economic prosperity hinges on wise water management. The program scope is statewide and its delivery unbiased. Its mission is to build informed leadership in resource decisionmaking. The topics covered respond to the information needs of many diverse interest groups. The Watercourse program relies on cooperation with other resource agencies, water educators, and Montana citizens.

The Montana Watercourse has two major components, an Adult Water Awareness Program and a Water Education for Teachers Program, or Project WET Montana.

Council Action

Dorothy Bradley updated the EQC on the Water Center's research and programs. Her update included a discussion of the Drinking Water Assistance Center and a report to the EQC. The report is included as **Appendix 2.** The report stated that "[t]he Montana Water Center program includes: (1) a water resource lending library and information service; (2) a water directory/database that lists academic, professional, and citizen names, organizations, and interests; (3) an annual water research program emphasizing state needs; (4) partnership programs between the private and government sectors to respond to water-related challenges; and (5) a new technical and training assistance program for small, drinking water systems which is presently focusing on demonstrations of alternative technology and wellhead protection.

Dorothy Bradley's presentation and the EQC's ensuing discussion fulfilled the EQC's statutory responsibilities for water-related research.

4. Water Data Management

Section 85-2-105(3), MCA, requires the EQC to:

(d) analyze, verify, and comment on the adequacy of and information contained in the water resources data management system maintained by the department [DNRC] under 85-2-112 . . .

Background

As the controversy over water issues increases in Montana, reliable and accessible information regarding these issues becomes ever more important. Effective and efficient water data management, including the gathering, storage, and dissemination of water data, is necessary for a valid long-term water policy that ultimately serves all Montanans.

The Montana Water Information System

In 1986, the DNRC delegated its responsibility to "establish and maintain a centralized and efficient water resources data management system" to the Montana Water Information System (WIS). The WIS, which is part of the Natural Resources Information System (NRIS), provides a central contact point for locating and obtaining all types of water data. In fact, the Water Policy Committee played an important role in the creation of WIS.

The Ground Water Assessment Program

The Montana Ground Water Assessment Act, section 2-85-901 et seq., MCA, systematically funds efforts to evaluate Montana's ground water resource. Its major purposes are:

- to coordinate Montana's ground water data collection and information distribution efforts,

- to develop an extensive and better planned statewide ambient water level and water quality monitoring network, and

- to create a 21-year program to systematically evaluate Montana's ground water resource.

In the 1995 biennium, the Assessment Act was to be funded through a diversion of $666,000 per year from the Resource Indemnity Trust (RIT) tax proceeds. However, Ground Water Assessment Act programs experienced a serious funding short-fall in 1994 due to lower than expected revenues to the Resource Indemnity Ground Water Assessment Trust (RIGWAT), formerly the RIT, and due to an error in the Metalliferous Mining Tax law.

In short, the programs received $262,000 less than was expected for the year. This resulted in personnel layoffs and a total stoppage of field work. To help end the funding crisis, the steering committee chair assisted the Montana Bureau of Mines and Geology staff in making a series of detailed presentations to the Water Policy Committee, Environmental Quality Council, Revenue Oversight Committee, and Legislative Finance Committee. These efforts resulted in the Governor signing a grant agreement to ensure the Assessment Act programs would receive full funding for FY 95, and to eliminate the deficit. The legislature passed SB 46 to correct the error in the Metalliferous Mine Tax law and address funding for the ground water programs in the long-term.

Council Action

Jim Stimson, Coordinator of the WIS at the Montana State Library periodically updated the EQC on the water resources data management system and the ground water program. For example, Mr. Stimson presented a briefing summary on the Montana Water Information System in which he outlined the number of information requests he receives, summaries of special projects, and committee activities. Additionally, Mr. Stimson presented a report to the EQC on the water information systems activities and projects. The briefing summary and report are included as **Appendix 3.**

Mr. Stimson also discussed that the Ground Water Assessment Steering Committee resolved an issue regarding state/tribal relations in the Kalispell/Flathead area. The resolution, reached through a cooperative agreement, was significant because the reservation lands are sizable and a convincing ground water study requires access to those lands.

Allan Cox, Director of the NRIS and Mr. Stimson requested legislation to modify the statutes that direct the water data management system. Specifically, they requested that current Montana law be changed to reflect that NRIS, not the DNRC, fully staffs, operates, and supports WIS. Therefore, the proposed bill would amend statutory references to WIS by moving DNRC oversight to NRIS to reflect that NRIS obtained startup funding for the system and subsequently staffed and operated it. The EQC agreed to sponsor the bill adopting these requests.

Jim Stimson's update and any ensuing discussion fulfilled the EQC's statutory responsibility regarding information contained in the water resources data management system.

ADDITIONAL ISSUES

1. Water Leasing

Section 85-2-436, MCA, requires the Department of Fish, Wildlife, & Parks (DFWP) and the DNRC to conduct a Water Leasing Study in consultation with the EQC.

Background

Partially in response to a severe drought in 1988, the 1989 Legislature passed a water leasing study bill. The original study bill allowed for the DFWP to study up to five streams and expired in 1993. The 1991 legislature extended the leasing period to ten years and increased the five-stream limit to ten. The 1993 Legislature further extended leasing to up to 20 streams and requested an annual report for each study. The study has concentrated on smaller streams.

The 1991-92 Water Policy Committee recommended that the DFWP increase its efforts to use the water leasing process to improve Montana's fisheries. During the 1993-94 interim, the Committee was again encouraged by the DFWP's continued progress in the Water Leasing Study, specifically, the department overcoming the initial program problems including public uncertainty with the program, complex water rights issues involving many water rights holders, public relations issues involving the DFWP, and economic concerns.

A final report is not due to the legislature until 1998.

Action Taken:

Liter Spence from the Fisheries Division at DFWP gave a presentation to the EQC on the water leasing program, including an historical perspective and overview of the program. In addition, the DFWP submitted its annual progress reports and water leasing studies to the EQC, DNRC, and the Montana Fish, Wildlife and Parks Commission. These reports are included as **Appendix 4.**

2. Instream Flow Study

Few water issues have been as controversial in Montana as the issue of instream flow. The purpose of instream flow is to maintain or increase the flow of water in the watercourse for fisheries, recreation, and the protection of public health, while protecting existing water users and the stability of Montana's agricultural economy.

Background

The legislature has addressed instream flow issues periodically since at least 1969. In the 1989, 1991, and 1993 Sessions, the legislature debated controversial legislation specifically designed to increase instream flows in Montana.

Understanding its unique and comprehensive responsibility to "advise" the legislature regarding state water policy, "oversee" the policies and activities of state executive agencies as they affect Montana water resources, and to "communicate" with the public on water policy issues, the 1993-94 Water Policy Committee undertook an interim instream flow study.

The Committee's goals for the study were to educate the members of the Committee, the legislature, and members of the public regarding instream flow issues. The study included a review of Montana water law and the selection of a particular basin for study focus, specifically, the Big Hole River Basin. The Committee scheduled a series of public meetings during four days in the basin. The public meetings were well-attended and provided a forum for lively discussions on instream flow issues. The Committee believed that their work in the basin contributed significantly to the success of executive branch drought mitigation measures taken in the basin during the extended 1994 drought.

Also, the Committee believed that their educational approach contributed to the success of HB

472 during the 1995 Session. HB 472 allows for the first time under Montana water law a temporary change of a consumptive appropriation right to instream flow to benefit the fishery resource. It allows private entities to work with owners of water rights to lease water to benefit fisheries.

Council Action

Larry Holman, Chief of the Water Rights Bureau at the Department of Natural Resources and Conservation gave the EQC an update on HB 472. To date, the department had not had any applications for water leasing. Mr. Holman stated that before private entities submit an application they have to publish their intent. So far, no one had done that. Mr. Holman further stated that HB 472 also calls for a working group from the governor's office to prepare a report. The Governor appointed an HB 472 Instream Flow Working Group. The Montana Consensus Council gave the EQC a memorandum outlining the working group's accomplishments to date and suggestions to improve the possibility of leasing water rights for fishery resources. The Montana Stockgrowers Association, Montana Farm Bureau Federation, Montana Water Resources Association, Montana Association of Conservation Districts, Montana Wildlife Federation, Montana Trout Unlimited, and the Montana Consensus Council produced a brochure on "Leasing Water Rights to Benefit Fisheries: Building Private Partnerships for Montana's Fish." The memorandum and brochure are included as **Appendix 5**.

HB 472 is scheduled to terminate in 2005. The DNRC set up procedures for implementing HB 472, but they have not been tested since there have been no applications.

Additionally, Bruce Farling, Executive Director of the Montana Council of Trout Unlimited gave an update on HB 472 instream flow.

CONCLUSION

In conclusion, during the 1995-96 interim, the EQC fulfilled its statutory duties to analyze and comment on the state water plan, the renewable resource grant and loan program, water-related research, and analyze, verify, and comment on the adequacy of and information contained in the water resources data management system. Additionally, the EQC discussed instream flows and water leasing.

APPENDIX I

1996 RRGL PROJECT FUNDING RECOMMENDATIONS - GOVERNOR'S REPORT

RANK	APPLICANT / PROJECT NAME	Total Project Cost	Grant Request	Recommended Grant Funding	Cumulative Grant Funding	Loan Funding Requested
	DNRC Program Funding for Emergency Grants			125,000	125,000	
1	Mt Reserved Water Rights Compact Commission	150,000	100,000	100,000	225,000	
	--Chippewa-Cree Water Rights Settlement Implementation					
2	Broadwater County Conservation District	62,795	47,080	47,080	272,080	
	--Slim Sam Riparian Area Implementation					
3	Sheridan County Conservation District	256,816	95,412	95,412	367,492	
	--Sheridan County Groundwater Management Program					
4	Cascade County Conservation District	160,300	100,000	100,000	467,492	
	--Agrimet Irrigation Water Management Project					
5	East Missoula Sewer District	4,600,000	100,000	100,000	567,492	
	-- Wastewater Treatment and Collection System					
6	Mt Natural Resource Information System (Nris)	148,260	99,781	99,781	667,273	
	--Montana Climate Information Center					
7	Fort Benton City of	1,020,667			667,273	520,480
	--Water Distribution Improvements and Meter Installation					
8	Cascade Town of	2,336,500	100,000	100,000	767,273	
	--Wastewater System Improvements					
9	Greenfields Irrigation District	1,399,302	100,000	100,000	867,273	
	--J" Lake - Reregulation Reservoir					
10	Valier Town of	1,200,000	100,000	100,000	967,273	
	--Wastewater Treatment Facility Upgrade					
11	Lakeside Water District	1,100,000			967,273	600,000
	Water System Improvements					
12	Beaverhead County Board of Commissioners	224,800	100,000	100,000	1,067,273	
	--Big Hole River Return Flow and Water Budget Study					
13	Mt Bureau of Mines and Geology	113,923	99,959	99,959	1,167,232	
	--Groundwater Protection and Education For Rural Schools					
14	Lake County Land Services	105,000	100,000	100,000	1,267,232	
	--Evaluation of Level II Treatment for Individual Septic					
15	Gallatin County Local Water Quality District	319,654	100,000	100,000	1,367,232	
	--Groundwater Evaluation and Monitoring Project					
16	Bloomfield School District #30	20,875	18,875	18,375	1,385,607	
	--GeoSource Heat/Cool System					

RANK	APPLICANT / PROJECT NAME	Total Project Cost	Grant Request	Recommended Grant Funding	Cumulative Grant Funding	Loan Funding Requested
17	Choteau City of	400,000	100,000	100,000	1,485,607	
	--Rehabilitation of Sewer System					
18	Yellowstone County	53,250	29,250	29,250	1,514,857	
	--Conservation Resource Inventory, Billings Planning Area					
19	Glasgow Irrigation District	98,221	98,221	98,221	1,613,078	
	--Vandalia Diversion Dam - Rehabilitation Plan Study					
20	Roosevelt County Conservation District	64,561	64,561	64,561	1,677,639	
	--Fort Peck Assiniboine & Sioux Off-Reservation Water Project					
21	Chouteau County (Highwood)	1,463,121	80,000	100,000	1,777,639	106,321
	--Highwood Infrastructure Improvements					
22	Pondera County Conservation District	93,110	20,000	20,000	1,797,639	
	--Lake Frances Shoreline Rehabilitation Project					
23	Neihart Town of	361,028	100,000	100,000	1,897,639	
	--Water Distribution System					
24	Ruby Valley Conservation District	144,577	99,741	99,741	1,997,380	
	--Ruby River Water Management and Conservation Project					
	GRANT FUNDING LINE					
25	Mt Dept of Environmental Quality	181,818	100,000	100,000	2,097,380	
	--Direct Planning Grants to Small, Needy Communities					
26	Chouteau County and Fergus County	91,375	76,450	76,450	2,173,830	
	--PN Bridge and Campground - Streambank Erosion Control					
27	Missoula City of	3,294,000	100,000	100,000	2,273,830	
	--Reserve Street South Sewer Project					
28	Fort Shaw Irrigation District	531,700	100,000	100,000	2,373,830	
	--Irrigation Efficiency and Water Quality					
29	Custer County Soil and Water Conservation Dist.	135,560	97,460	97,460	2,471,290	
	--Demonstration of Livestock Waste on Irrigated Croplands					
30	Thompson Falls City of No. 2	558,595	100,000	100,000	2,571,290	100,000
	--Waterline Replacement					
31	Chinook City of	627,110			2,571,290	294,000
	--Water Treatment Plant Improvements					
32	Park County	215,900	100,000	100,000	2,671,290	
	--Hydrological Reconnaissance of the Paradise Valley					
33	Twin Bridges Town of	1,268,500	100,000	100,000	2,771,290	200,000
	--Water System Improvements					
34	Lewis and Clark County Water Quality Protection	214,410	100,000	100,000	2,871,290	
	--Lower Tenmile Resource Assessment					

RANK	APPLICANT / PROJECT NAME	Total Project Cost	Grant Request	Recommended Grant Funding	Cumulative Grant Funding	Loan Funding Requested
35	Hill and Liberty County Conservation Districts	150,833	100,000	100,000	2,971,290	
	--Water Resource Evaluation of the Sage Creek Watershed					
36	Lewis and Clark County	42,500	39,500	39,500	3,010,790	
	--Flood Mitigation Plan					
37	Glasgow City of	2,048,000	100,000	100,000	3,110,790	
	--Sanitary Sewer Separation Project					
38	Meagher County Conservation District	219,527	100,000	60,306	3,171,096	
	--Cottonwood Creek Watershed Treatment					
39	Fort Benton City of	169,480	100,000	100,000	3,271,096	
	--Irrigation and Community Forestry Rehabilitation					
40	Mt Dnrc, Forestry Div, Fire and Aviation Mgmt Bureau	109,564	100,000	100,000	3,371,096	
	--Western Montana Fire Hazard Assessment GIS Project					
41	Chester Town of	884,000	100,000	100,000	3,471,096	
	--Water Treatment Plant and Storage System Improvements					
42	Thompson Falls City of #1	261,963	100,000	100,000	3,571,096	100,000
	--Water Supply Improvements I					
43	Ekalaka Town of	354,000	100,000	41,000	3,612,096	
	--Water System Improvement Project					
44	Roundup City of	2,391,187	100,000	100,000	3,712,096	
	--Wastewater Treatment Facility					
45	Livingston City of	130,000	100,000	27,000	3,739,096	
	--Livingston Open Space Conservation Initiative					
46	Yellowstone County	180,000	100,000	100,000	3,839,096	
	--Alkali Creek Streambank Stabilization and Park Landscape					
47	Fort Peck Rural County Water District	39,000	36,000	36,000	3,875,096	
	--Fort Peck Water System Development					
48	Yellowstone Conservation District	200,000	100,000	100,000	3,975,096	
	--Watershed Planning - Integrating Geospatial Information					
49	Culbertson Town of	626,518	100,000	No Funding	3,975,096	
	--Wastewater Collection and Treatment Project					
50	Eastern Agricultural Research Center	243,600	60,000	No Funding	3,975,096	
	--Alternative Irrigation Systems and Alternative Crops					
51	Richland County of	797,500	100,000	No Funding	3,975,096	
	--Lone Tree Creek Channel Rehabilitation					
		$31,663,400	$4,262,290	$3,975,096		$1,920,801

APPENDIX 2

MONTANA WATER RESOURCES CENTER
FY95 PROJECTS
June 1, 1995 - May 31, 1996

MONTANA
University System
WATER RESOURCES
CENTER

PROJECT TITLE: Project FREEFLOW

Susan How
The Glacier Institute P. O. Box 7457
Kalispell, MT 59904
phone: 7756-3911

PROJECT TITLE: Water Management Model to Enhance Summer Stream Flow of the Big Hole River, Montana

Richard Marvin, Wayne Van Voast, John Metesh, Tom Patton, and Leonard Rinehart
Montana Bureau of Mines and Geology, Montana Tech of UM
Butte, MT 59701
phone: 496-4180

PROJECT TITLE: Engineering Review of Alternative Onsite Wastewater Systems

Gretchen Rupp
Extension Service - Taylor Hall Montana State University
Bozeman, MT 59717
phone: 994-1748

PROJECT TITLE: Developing a Watershed Protection Plan in the Tenmile Creek Drainage, Lewis and Clark County, Montana

Steve. Siebert, Forestry Department - University of Montana
J. M. Belsky, Sociology Department, University of Montana
J. Miles and V. Drake, Lewis and Clark County
P. Hettinger, Environmental Scientist, University of Montana
University of Montana
Missoula, MT 59812
phone: 243-3408

PROJECT TITLE: Constructed Wetlands for the Treatment of Wastewater

Otto Stein
Civil Engineering Department Montana State University
Bozeman, MT 59717
phone: 994-6121

PROJECT TITLE: Modeling the Response of Attached Algal Levels to Nutrient Management in Montana Rivers

Vicki Watson
Division of Biological Sciences
University of Montana
Missoula, MT 59812-1002
phone: 243-5122

Dorothy Bradley, Director
Huffman Building
Montana State University
Bozeman, MT 59717-0368
Fax 406-994-1774

Marvin Miller, Assoc. Director
Montana Bureau of Mines
Montana Tech
1300 W. Park Ave.
Butte, MT 59701-8997

Don Potts, Assoc. Director
School of Forestry
University of Montana
Missoula, MT 59812
Fax 406-243-4510

MONTANA WATER RESOURCES CENTER
FY94 PROJECTS
June 1, 1994 - May 31, 1995

PROJECT TITLE: Virus Transport and Survival in a Cold, Aerobic, High Hydraulic Conductivity Aquifer System

Dan DeBorde
Division of Biological Sciences
University of Montana
Missoula, MT 59812
phone: 243-2389

PROJECT TITLE: Microbial Remobilization of Heavy Metals: Potential Impacts of Remediation Efforts on Long Term Ground Water Quality

James Gannon
Associate Professor, Division of Biological Sciences
University of Montana
Missoula, MT 59812
phone: 243-5122

PROJECT TITLE: Fate and Mobility of Arsenic in Soils of the Madison River Basin

Bill Inskeep
Soil Chemist, Plant and Soil Science
Montana State University
Bozeman, MT 59717
phone: 994-5077

MONTANA WATER CENTER
FY95 ADVISORY COMMITTEE

MONTANA
University System

WATER RESOURCES
CENTER

Loren Bahls
Water Quality Division,
DHES
Room A206 - Cogswell Bldg.
Helena MT 59620
Phone: 444-5330

Bill Engle
U.S Environmental Protection
Agency
Drawer 10096-Federal Bldg.
Helena MT 59626
Phone: 449-5486

Gary Gingery
Montana Dept. of Agriculture
Capitol Station
Helena MT 59620
Phone: 444-2944

Jane Holzer
Montana Salinity Control
Assn.
315 S. Main Street
Conrad MT 59425
Phone: 278-3071

Marie Marshall
U.S. Soil Conservation
Service
Federal Bldg. - Room.443
10 E. Babcock
Bozeman MT 59715
Phone: 587-6823

~~*Michael Kakuk*~~
Environmental Quality
Council
Room ~~492~~ 106, Capitol Station
Helena, MT 59620
Phone: 444-~~5367~~ 3742

Doug Kikkert
Missoula County Health
301 West Alder St.
Missoula, MT 59802-4123
Phone: 523-4755

Bonnie Lovelace
Dept. of State Lands
1625 Eleventh Ave.
Helena Mt 59620
Phone: 444-2074

Joe Moreland
U.S. Geological Survey
Drawer 10076
Helena MT 59626
Phone: 449-5263

Rich Moy
Dept. of Natural Resources &
Conservation
1520 E. Sixth Ave.
Helena MT 59620
Phone: 444-6633

Mike Murphy
Montana Water Resources
Association
501 N. Sanders #4
Helena MT 59601
Phone: 442-9666

Frank Pickett
Montana Power Co.
40 East Broadway
Butte MT 59701
Phone: 723-5421

Gretchen Rupp
Environmental
Engineer/Specialist
MSU Extension Service
Taylor Hall
Montana State University
Bozeman, MT 59717
Phone: 994-1748

Liter Spence
Dept. of Fish, Wildlife &
Parks
1420 E. Sixth Ave.
Helena MT 59620
Phone: 444-3888

Mike Volesky
Montana Association of
Conservation Districts
501 N. Saunders
Helena MT 59601
Phone: 443-5711

Dorothy Bradley, Director
Huffman Building
Montana State University
Bozeman, MT 59717-0368

Marvin Miller, Assoc. Director
Montana Bureau of Mines
Montana Tech
1,300 W. Park Ave.

Don Potts, Assoc. Director
School of Forestry
University of Montana
Missoula, MT 59812

DRINKING WATER ASSISTANCE CENTER -- WATER CENTER
March, 1995

MONTANA
University System
WATER RESOURCES
CENTER

What is the Drinking Water Assistance Center?

The Montana University System Water Center has a small federal appropriation to support and provide technical assistance to small drinking water systems. We believe there is significant potential for the University System to act in partnership with government, small water systems, inventors and manufacturers of alternative technologies, and the private engineering community, to find creative ways to ease the burden of some of the new drinking water regulations and at the same time protect the public health.

We hope to expand and work with Water Centers in a five-state university consortium known as WINSM (Wyoming, Idaho, North and South Dakota, and Montana). Our projects may have both regional and nationwide ramifications and usefulness.

DEMONSTRATION COMPONENT

1. Clearwell technology

   We will help demonstrate a new computer technology which may substitute for the construction of baffles in clearwells to fulfill requirements on appropriate contact time for disinfection. The technology shows great promise, but is not currently recognized as an approved method to improve and calculate chlorine contact time. We are hoping university involvement can provide an independent evaluation arising from tests and observations at a number of demonstration sites.

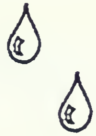
2. Limestone Contacters

   Limestone contacters have been used for removing iron and manganese from drinking water supplies. It is speculated that this inexpensive and low-maintenance technology could also be used for lead and copper corrosion control. We are in the initial stages of finding appropriate partners, and designing a demonstration to assess the potential.

EDUCATION COMPONENT

1. Wellhead Protection Plan: Demonstration Sites, Guidance Document, and Training Module

   Four demonstration sites will be selected. A geotechnical evaluation and delineation of an appropriate wellhead protection area will be mapped for each. Case histories will be developed in designing the guidance document. The guidance document will be presented in educational forums with help from the Montana Rural Water Systems, the Midwest Assistance Program, Inc., and the Montana Environmental Training Center. This provides an excellent opportunity to include local government officials, municipal and isolated water operators, schools, and community members in the process. The project will also include a video and telecommunications component.



Dorothy Bradley, Director
Huffman Building
Montana State University
Bozeman, MT 59717-0368
Fax 406-994-1774
Tel. 406-994-6690

Marvin Miller, Assoc. Director
Montana Bureau of Mines
Montana Tech
1300 W. Park Ave.
Butte, MT 59701-8997
Fax 406-496-4451

Don Potts, Assoc. Director
School of Forestry
University of Montana
Missoula, MT 59812
Fax 406-243-4510
Tel. 406-243-6622

Report to the Montana Environmental Quality Council
From the Montana University System Water Resources Center
May, 1995

Issue – *Section 85-2-105(3)(c), MCA* requires EQC to:

> *...analyze and comment on water-related research undertaken by any state agency, institution, college, or university;...*

Background – Water Policy Committee efforts regarding water research have been framed by two major studies: the 1988 Environmental Quality Council-sponsored *Water Resources Research Center and Graduate Programs Study*, and the *1990 Interagency Water Research Policy Advisory Board Report*.

As a result of the studies, the Water Policy Committee recommended that:

- the university restructure the Water Research Center at Montana State University;
- staff be increased;
- federal funds be more aggressively sought;
- the program become more specific;
- there be greater coordination with state agencies;
- the university return indirect costs to the Center;
- the legislature provide sufficient funds to enable the Center to accomplish this mission.

Only the last of the above has not been implemented.

The Committee closely followed MSU's restructuring of the Center during the 1993-94 interim. MSU increased its support for the Water Center by conducting a nationwide search for a new director, increasing the position from .4 to 1 FTE, supporting two other staff persons, and providing office space.

The Water Center continues to receive funding through the U.S. Geological Survey, as part of the National Institute for Water Resources (NIWR), a network of 54 water centers that has traditionally been funded by the federal government for purposes of promoting water-related research, education and information transfer. The grants are awarded to researchers and educators through a competitive process involving the Center's broad-based advisory committee and scientific peer review. The annual federal support has diminished by 25% over the last 5 years, and totals approximately $78,000. Small sums are also allotted to the Water center's Associate Directors, Marvin Miller of the Bureau of Mines at UM-Tech, and Don Potts of the School of Forestry at UM-Missoula, to ensure communication and cooperation among the different units of Montana's higher education system.

The Water Center recently received a federal grant to develop a small systems drinking water assistance program, and is competing for other grants to expand this program and develop a water information news series using Montana radio and newspaper outlets. The Center plans to seek funding to develop a partnership of private, public and education entities working together on arid land issues.

The Water Policy Committee staff has participated in an advisory capacity on all the Water Center activities, including election of the director, Dorothy Bradley, prioritization of research grants, and program development.

The Montana Water Center program includes: (1) a water resource lending library and information service; (2) a water directory/database that lists academic, professional, and citizen names, organizations, and interests; (3) an annual water research program emphasizing state needs; (4) partnership programs between the private and government sectors to respond to water-related challenges; and (5) a new technical and training assistance program for small, drinking water systems which is presently focusing on demonstrations of alternative technology and wellhead protection.

MONTANA
University System
WATER RESOURCES
CENTER

ad hoc DRINKING WATER COMMITTEE
May, 1995

Bill Bahr
Environmental Specialist
Municipal Wastewater Assistance
Water Quality Bureau, DHES
P. O. Box 200901
Helena, MT 59620-0901
444-5337
444-2606 (FAX)

Jan Boyle
Montana Environmental Training Center
1211 N.W. Bypass
Great Falls, MT 59404
454-2728
761-1613 (FAX)

Anne Camper
Center for Biofilm Engineering
404 Cobleigh
Montana State University
Bozeman, MT 59717
994-4906
994-6098 (FAX)

Dean Chaussee
Private Citizen
505 South Roberts
Helena, MT 59601
443-5388

Marc Golz
Section Head
Field Services - Drinking Water
Water Quality Bureau, DHES
P. O. Box 200901
Helena, MT 59620-0901
444-4071
444-1374 (FAX)

Carol Flaherty
Communication Services
430 Culbertson
Montana State University
Bozeman, MT 59717
994-5136
994-4102 (FAX)

Dan Fraser
The Cadmus Group, Inc.
501 Tamarack
Helena, MT 59601
443-4173 (also FAX #)

Donna Jensen
American Water Works Association
Montana Section
197 Saddle Mountain Drive
Clancy, MT 59634
443-3179 (also FAX # -- call first)
443-6324 (FAX -- 3rd #)

Ted Lang
Civil and Agricultural Engineering
206 Cobleigh
Montana State University
Bozeman, MT 59717
994-2111
994-6105 (FAX)

Bill Leonard
Midwest Assistance Program, Inc.
Box 1456
Whitefish, MT 59937
862-3600
862-9159 (FAX)

Jim Melstad
Section Head
Drinking Water & Subdivisions
Water Quality Bureau, DHES
P. O. Box 200901
Helena, MT 59620-0901
444-4549
444-2606 (FAX)

Kate Miller
Hydrology Department
Montana Tech
Butte, MT 59710
496-4154
496-4451 (FAX)

Ed Rosenburg
Chemistry Department
University of Montana
Missoula, MT 59812
243-2592
243-4227 (FAX)

Jay Sinnott
Environmental Engineer
U.S. Environmental Protection Agency
Region VIII, Montana Office
Federal Building, 301 South Park
Drawer 10096
Helena, MT 59626-0096
449-5414, Ext. 228
449-5434 (FAX)

Otto Stein
Civil & Ag Engineering
221 Cobleigh
Montana State University
Bozeman, MT 59717
994-6121
994-6105

Dan Keil
Montana Rural Water Systems
925 7th Avenue South
Great Falls, MT 59405
454-1151
454-3116 (FAX)

Ken Weaver
Local Government Center
Wilson 2111
Montana State University
Bozeman, MT 59717
994-5163
994-1905 (FAX)

Dorothy Bradley, Director
Huffman Building
Montana State University
Bozeman, MT 59717-0368
Fax 406-994-1774
Tel. 406-994-6690

Marvin Miller, Assoc. Director
Montana Bureau of Mines
Montana Tech
1300 W. Park Ave.
Butte, MT 59701-8997
Fax 406-496-4451

Don Potts, Assoc. Director
School of Forestry
University of Montana
Missoula, MT 59812
Fax 406-243-4510
Tel. 406-243-6622

APPENDIX 3

Montana Water Information System

BRIEFING SUMMARY

November 15, 1996
By Jim Stimson

- Information Requests
  - 563 phone and walkin requests.
  - STATE = 38%, PRIVATE = 34%, OTHER = 14% (local and county government, academic and foreign users), FEDERAL = 13%.
  - STATE USE: DNRC and the DEQ at 21 and 20 percent, respectively, followed by FWP and MBMG.

- INTERNET Information Requests (NRIS Web Pages URL: http://nris.mt.gov)
  - 8,823 "visits" to the Water Information Web pages.
  - 4,183 visitors stayed longer and downloaded information.
    - 65% of the users are from the United States, most of the U.S. usage is from Montana.
    - About 30% are private individuals using online service providers like America Online, 30% are in education, 12% are users from the Government.

- New Data Sources
  - Access to new sources is expanding through use of the Internet.
  - There are additional "near real-time" data sources.
  - Access is facilitated through the "Active Links" page on Water's Web pages.

SPECIAL PROJECTS:

■ Drought Monitoring Program	- Starting the 5th year of operation. - Proposal submitted to the Renewable Resources Grant program to help provide access to existing climate information. - Standardized Precipitation Index (SPI) to be added in February of 1998.
■ Waterbody Project	- NRIS will work with the DEQ to link waterbody reaches with EPA index numbers. The GIS can then be used to show where waterbody reaches have been assessed, helps integration of other water quality data, and in prioritizing management efforts.
■ Volunteer Water Monitoring Project	- Grant proposal funded by EPA for statewide coordination. - NRIS will provide software and technical support.
■ Montana Rivers Information System	- Managed under contract with FWP. - MRIS can be accessed over the State's SUMMITNET. - Working to make access possible over the Internet.

C:\MWIS\WATERPOL\EQC-RPT.F97

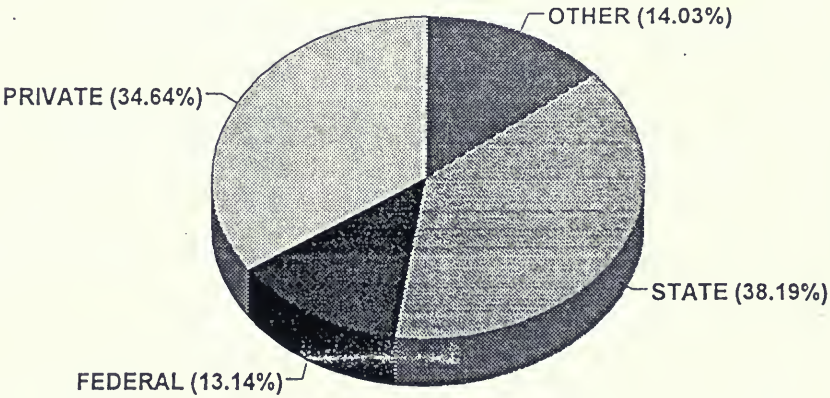
COMMITTEE BRIEFINGS AND UPDATES

■	Ground Water Assessment Steering Committee (GWASC)	- Water Information Coordinator continues as Committee Chair. - Cooperative agreement with the Salish-Kootenai Tribal Government signed and in place. - Continue to assist to implement project-level work plans, clarify budget issues and the Steering Committee's oversight role.
■	General briefings to other committees on water-related issues.	- Environmental Quality Council (Water Policy Sub-committee). - Drought Advisory Committee. - Water Resources Coordination Committee. - Watershed-level committees.

Natural Resource Information System
Users by Sector

Water Information System

Number of Request 563

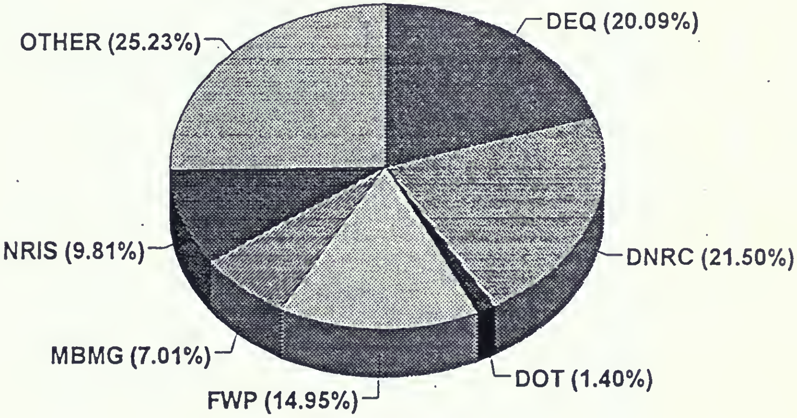


Natural Resource Information System

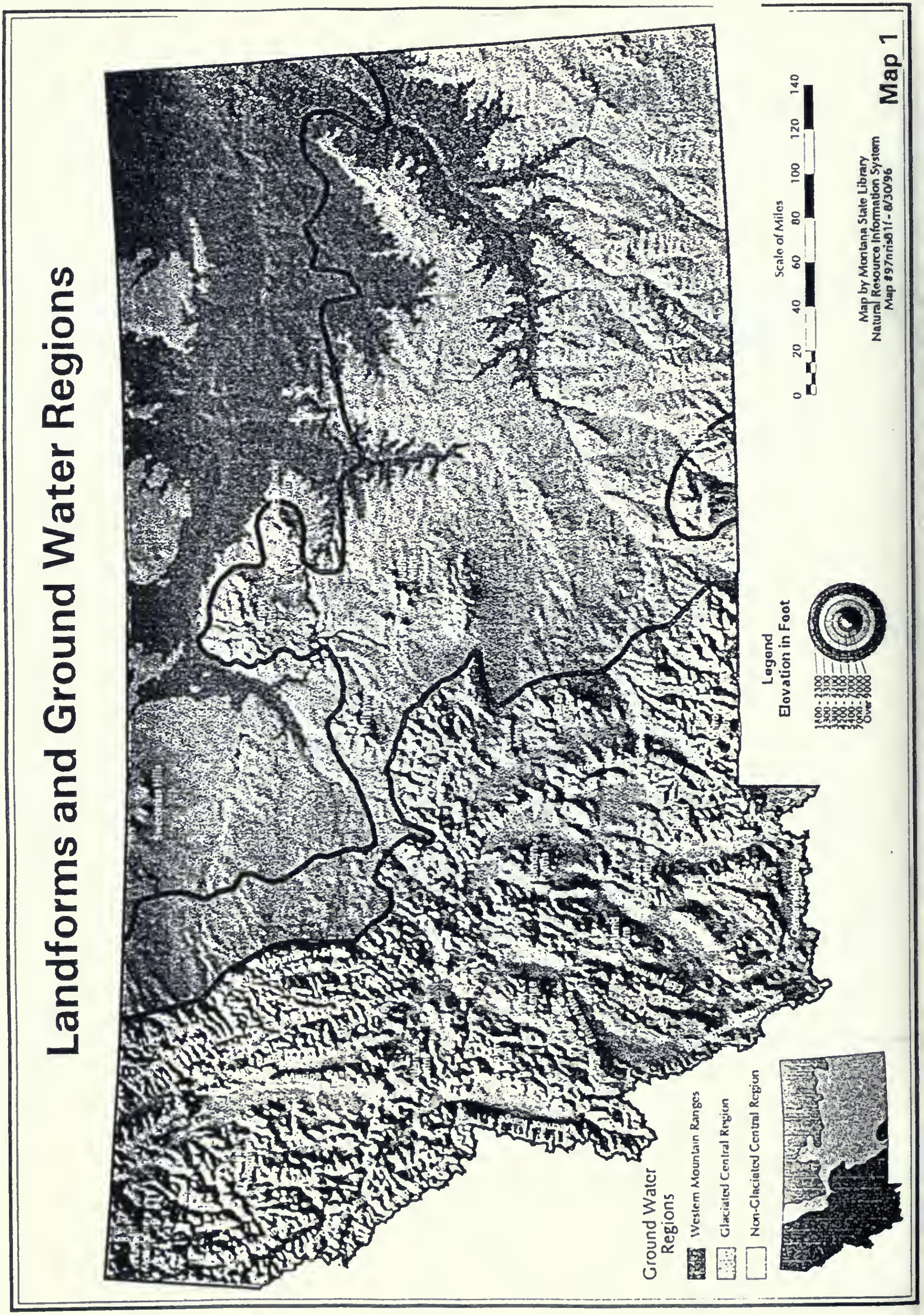
Users by State Agency

Water Information System

Number of Request 214



GROUND WATER ATLAS MAP EXAMPLE



Water Information System Report

OVERVIEW

During 1996, staff continued improving assess to water data by increasing the number of Internet links to new and existing sources of water information. Also during this time, many of the data sources established new products and report formats on the Internet. These new products make water information easier to obtain and interpret. Together with the Water Information System's efforts, these new products represent major strides that improve service to end users by making it easier to obtain information in ready-to-use formats. Many more users are taking advantage of the improved service, a fact demonstrated by the dramatic increase in the number of users obtaining water data directly via the Internet during the reporting period.

The Water Information System continues to use geographic information system (GIS) and new relational data base technologies increasingly to serve System users by developing tools for a variety of water related applications. This year staff assisted personnel from several other state agencies in obtaining and applying the GIS as an effective desktop tool for well head protection and management of solid waste landfill sites. Significant progress was also achieved in using new relational data base software to develop data bases with user interface menus that support traditional information management applications both within NRIS and other state natural resource agencies.

INFORMATION REQUESTS

Internet access has had a major positive impact on the Water Information System's data delivery and clearinghouse service. Over 4,000 patrons downloaded water data, maps, and other related information from the Water System's Web pages, and more than 8,800 individuals briefly visited the Web site. These users essentially "serve themselves" without interacting with staff. This allows the staff to focus more time on serving users without Internet access and on more difficult requests and referrals. The web pages have also greatly improved the ability of the staff to refer users quickly to appropriate information sources within Montana, the U.S., and in some cases, in other parts of the world.

Although the Internet has become an invaluable tool, Water System staff still place high priority on providing custom responses to a substantial number of requests that are received each year. Custom service is available for patrons that do not have access to the Internet or the State's Bulletin Board. The Water System will continue to place high priority on the personal and custom service for these patrons and for the more complicated requests.

About 560 individual custom requests were processed during 1996. This is slightly above last years number, however, for the last 2 years, requests have come in around 500 per year. Of the 563 non-Internet requests, approximately 38 percent came from state agencies; 34 percent were from private individuals, consultants, and non-profit groups; 14 percent were in the "Other" category that represent local and county government, academic and foreign users. Federal usage was at 13 percent. Among the state agencies, DNRC and the DEQ used the System the most at 21 and 20 percent, respectively. These agencies are followed by FWP and MBMG. Historically, the DNRC used the Water Information System most, about 50 percent of the request came from the DNRC each year. This is the first year that the DEQ usage equaled that of the DNRC. This change is due to the reorganization of the former DHES, DSL, and DNRC.

The total number of users visiting the Water Web pages for the period was 8,823. Of that number about 4,183 users explored the Water Web pages and downloaded information. Of these users about 30 percent are private individuals who use an Internet provider, like American Online, for example. The education sector also represents about 30 percent of the online users. Government usage makes up about 12 percent. The Internet patrons access the "Active Links to Water Data" page most frequently which indicates this page is an effective way to get users connected to the most appropriate sources to meet their needs. Drought Monitoring pages are access frequently as well, especially during mid- to late-winter when the snow pack reaches its maximum accumulation and later when runoff is taking place. This usage indicates that the Drought pages are providing information when it is needed by patrons for decision making and planning. Internet user statistics also reveal that graphic images (gif files) of the drought maps and other graphics are downloaded most frequently from the Water Web pages.

PROGRAM OUTREACH

Staff provided numerous groups with presentations and seminars on the NRIS program, Water Information services, GIS technology, and data base management software and techniques. Presentations were given to the county planners, local citizen water resource organizations, conservation districts, citizens involved with volunteer water monitoring, grade schools and institutions of higher education. Many of these groups now request presentations and workshops annually. Staff have also been requested to advise several groups planning data collection and dissemination activities. Groups like the Upper Clark Fork Steering Committee, Bitterroot Watershed Council, Big Hole Basin Watershed Committee, and others requested input and feedback from the Water Information Coordinator periodically throughout the year.

Several previous outreach efforts came to fruition during the reporting period. For several years Water System staff promoted the use of GIS technology for water resource applications among state agencies and watershed committees. This year the Department of Environmental Quality initiated the use of GIS in two areas, well head protection and management of landfills. In both cases, Water Information staff worked closely with the DEQ personnel to provide base-level data, training and technical support. DEQ staff are now using desktop GIS software to assist in developing maps of local well head protection areas and conduct simple spatial analysis. DEQ staff, with assistance from Water System staff, integrated landfill site locations and attribute information into GIS format. For the first time, Montana has a GIS coverage depicting landfill locations and indicating whether they are active or closed. This is an important GIS layer because it can be combined with other GIS layers showing the locations of shallow ground-water resources and analyzed to help identify shallow aquifer throughout Montana that may be at risk to contamination plumes beneath landfills. In addition to the DEQ, the Upper Clark Fork Steering Committee requested assistance in using GIS to help prioritize management decisions and identify water use trouble-spots within their basin. NRIS will provide some programming services to generate standard data sets and maps of the basin and will transfer the GIS to the DNRC Water Rights Field Office in Missoula. DNRC staff will continue supporting the Committees use of GIS with assistance from Water Information staff. The Water Information System will continue to work with the DEQ, other state agencies, and citizen groups to help them use GIS as a tool for water resource management.

WATER RELATED COORDINATION COMMITTEES

Advising committees on water information policy continued to be an important activity for the period. Throughout the year the Water Information Coordinator provided updates to the following committees: Environmental Quality Council (EQC) which now includes the Legislative Water Policy Committee; Water Resources Coordination Committee; Big Hole Watershed Advisory Committee; and others. The Coordinator continues to chair the Ground Water Assessment Steering Committee. The committees also provide opportunity for the Water Coordinator to track statewide operations of other state and federal agencies, and to keep appraised of existing laws and policies that effect water resources.

INTERNET ACCESS

Major effort has been directed in maximizing the use of the Internet for improving access to water information. This effort resulted in construction of a series of Water Information Web pages accessible from the main NRIS Web page. From the main water page a user can:

1. See descriptions of all sources available through the Water Information System;
2. Directly access water data and map products from a variety of sources;
3. Access current and historic drought monitoring information including Surface Water Supply Index (SWSI) maps and histograms, Palmer Drought Severity Index (PDSI) maps and histograms, and Relative and Visual Greenness satellite imagery;
4. View maps and reports from the Montana Rivers Information System; and
5. Examine a presentation on applying GIS technology to water resource applications.

The "Active links" page provides a way to quickly link users with useful and timely water information. For example, several sources deliver near real-time information on snow pack, reservoir storage, and streamflow discharge. Prior to this year, this type of information was very difficult to access and nearly impossible to download locally. Other sources provide daily and monthly updates which are also useful. All of this information is available in ready-to-use graphic and map format. The map products make it possible to quickly assess snow pack, streamflow, reservoir storage and soil moisture conditions on a statewide and regional basis. It is important to note also that users can download these product to their home or office computer for use in reports and presentations.

The Drought Monitoring page also provides users with maps, graphs, and text files that help quickly assess moisture conditions on a statewide basis. During the period from February to August, Drought Monitoring products are updated monthly and widely used. The maps and graphics can be downloaded and used for a variety of purposes.

PROJECTS OVERVIEW

Montana Rivers Information System (MRIS): MRIS data continues to be requested frequently and general information about MRIS is also accessed frequently from the Water Information's MRIS Web page. The data base continues to be one of the primary sources of river-related information for Montana. To make it easier for users to access the MRIS, staff from the Water System and Montana State Library (MSL) installed a copy of the data base on a computer network server at the MSL. Remote users are now able to access the MRIS via the State's SUMMITNET computer network. This arrangement has several advantages. First, users do not have to install the MRIS software and data base on their local hard drive which requires about 40 megabytes (MB) of disk space. Another advantage in this arrangement is that it greatly simplifies software and data maintenance because staff only need to update the one network copy of MRIS rather than 30 to 50 individual copies installed through Montana. In addition, trouble shooting software installation is eliminated. The Water Information System and MSL will continue to provide access to MRIS in this manner on a trial basis for the coming fiscal year.

Plans have been made to test remote use of the MRIS on the Internet. Implementation and testing of Internet access will take place sometime next fiscal year. This arrangement will expand access to patrons that do not have access to the SUMMITNET.

Montana Drought Monitoring: As stated above, Drought Monitoring products continue to be valuable tools for a variety of users and are accessed frequently. Product provided during the reporting period included the SWSI maps, histograms, and special histograms comparing the current month's SWSI with the previous month's values. Visual and Relative Greenness maps, developed from satellite imagery, were provided on a weekly basis beginning in May of the reporting period. Missing from the list of products are Palmer Drought Severity Index (PDSI) maps and histograms. Access to the PDSI data ended when

Montana State University (MSU) closed its Climate Center.

Steps were taken during the year to encourage MSU to reopen the Climate Center but no funding source could be found. The Water Information Coordinator with assistance from DNRC staff, Jesse Abers, initiated communication with Dr. Kelly Redmond in an attempt to obtain either PDSI data or an alternative index data from the Desert Research Institute (DRI). Dr. Redmond agreed to help with Montana's Drought Monitoring effort and steps will be taken to write a grant to help NRIS, DNRC, and the DRI replace the PDSI data set. The Water Information System remains committed to expanding the use of drought and climate information and will continue to use the Internet, State BBS and the news media to keep citizens informed.

Montana Climate Information Center at NRIS: Closure of the MCC is a serious set-back for the Drought Monitoring Program. It was also a serious setback for many programs that depend on timely reporting of climate information, and for new efforts to expand the use of climate information to help citizens and government respond to, and in some cases take advantage of, Montana's diverse climate and variable weather conditions. To address this need, the Water Information Coordinator discussed options with MSU, DNRC, National Weather Service (NWS), and others to identify the role NRIS's Water Information System can play in filling the information gap. After these discussions, the Water Coordinator wrote a grant proposal to the Montana Renewable Resource Grant Program. The primary objective of the grant proposal is to establish a Climate Information Center as part of the NRIS program to supply, and expand on, services provided by the former Climate Center. NRIS would not conduct research but would use startup funding to help defray the expense of establishing the Climate Information Center. NRIS would work with the Western Regional Climate Center in Reno, Nevada, and others, to make existing weather and climate information available to anyone who needs it. Under this proposal, the Water System would maintain data summaries and develop tools to support applications used in agriculture, recreation, water- and land-use management, engineering projects, mining, and environmental impact assessment. New geographic information system (GIS) maps and graphs would be developed to make the climate information easier to understand. All data products would be available through NRIS (customized request responses, over the Internet, from the State BBS).

Montana Ground Water Atlas: Shortage of funding for publication delayed the release of the Atlas. The Water Information Coordinator, and staff from the Montana Department of Environmental Quality (DEQ) and EPA Region VIII have been working to identify additional sources of funding. EPA is committed to providing additional funding during the next fiscal year. In the mean time, the Water Information Coordinator is developing an electronic version of the Atlas to be distributed via the Internet. The electronic version of the Atlas will include text, figures, and high quality maps and can be viewed with free software. The electronic version of the Atlas will be a useful addition to the hard copy publication and should be valuable to resource managers, educators, and private citizens.

Volunteer Water Monitoring: During the last days of the fiscal year, a contract was signed between NRIS and the DEQ. Several changes were implemented in the projects as specified in the contract. Because the DEQ did not receive an FTE for the projects coordinator position, the Water Information System was given the lead in coordinating the project. A subcontract will be developed for the coordinator position with the Montana Watercourse at MSU. Watercourse will coordinate both the citizen and education volunteer monitoring programs. The Coordinator will work with an advisory committee to set specific goals and guidelines for the statewide coordination of volunteer monitoring. The Position will also develop training materials and provide technical assistants and training seminars. The Water Information System's role in volunteer water monitoring will be to provide data management tools and training for volunteer groups statewide. There are several optional approaches to providing these tools. Software could be developed by Water Information staff for distribution to individual groups. Another option is to focus development of tools for access and distribution via the Internet. Base map information will also be structured and organized for more efficient use by citizen volunteer monitoring groups. The specific approach use by the Water Information program will be set next fiscal year after meeting with the projects advisory group.

DEQ Waterbody - EPA RRN Project: The Waterbody data base is maintained by the DEQ and documents impaired stream reaches and identifies the cause and source of impairments. A short coming of the Waterbody data base is that individual stream reaches cannot be displayed or mapped in an automated way. The goal of this project is to link individual reaches within the Waterbody data base with the EPA River Reach Numbering system. These numbers allow stream reach information to be integrated into a geographic information system (GIS). The project is basically a pilot project to develop and refine procedures for linking Waterbody to stream reach segments indexed with EPA's RRN system. The Pilot would be conducted for Hydrologic Unit 10070002 (Yellowstone River near Livingston). Specific goals will be: 1) Establish a methodology to assign RRN's to Waterbody reaches; 2) Automate the process; 3) Complete indexing for the pilot area; and 4) Estimate the number of watersheds that could be completed with the automated procedure. Adding EPA reach numbers to the Waterbody data base represents a significant step forward in making it possible to use water quality data from multiple sources to evaluate the status of a stream reach. Once complete, individual stream reaches can be assessed using a GIS and data from the DEQ Waterbody data base, the FWP MRIS, and EPA's STORET.

MONTANA NATURAL RESOURCE
INFORMATION SYSTEM

MARC RACICOT, GOVERNOR
MONTANA STATE LIBRARY

STATE OF MONTANA

1515 EAST 6TH AVENUE
PO BOX 201800

HELENA, MONTANA 59620-1800
(406) 444-5354

October 31, 1996

TO: Environmental Quality Council

FROM: Allan Cox, Director, Natural Resource Information System
Jim Stimson, Coordinator, NRIS Water Information System

Jim Stimson

RE: Statutes pertaining to the Water Information System

As you are aware, the Natural Resource Information System (NRIS) at the Montana State Library houses the Montana Water Information System (WIS). Legislation establishing the *Water Data Management System* (85-2-112, MCA) was originally directed to the Department of Natural Resources and Conservation (DNRC). In 1986, the DNRC and NRIS agreed to cooperate in creating the Water Information System specified in the legislation. Larry Thompson, the first NRIS Director, was successful in obtaining startup funding for the System through a grant from the Water Development Grant Program. The System was then established within NRIS in 1987. During the design and implementation phase of the WIS, DNRC staff acted in an advisory capacity. Since 1989, the WIS has been fully operational and fully staffed and supported by NRIS. The System within NRIS fulfills the requirements outlined in 85-2-112, MCA. NRIS and the DNRC agree that the best place for the WIS is at the State Library.

NRIS and DNRC wish to modify the code so that it reflects the actual implementation of the WIS. To accomplish that, we will request that legislation referring to the Water Data Management System within the DNRC be changed to refer to the NRIS program. This revision is essentially housecleaning and the suggested changes are presented below. We would like the Environmental Quality Council to review and comment on this proposed change. The suggested changes are attached.

C:\WIS\WISOPER\GENERAL\WISLEG2.DOC

"AN EQUAL OPPORTUNITY EMPLOYER"

Suggested changes to 85-2 Part 105, MCA that requires the Water Policy Committee of the EQC review progress and the status of the Water Information System are:

85-2-105 Subsection 2 d

d) analyze, verify, and comment on the adequacy of and information contained in the water resources data management system maintained by the ~~department~~ Natural Resource Information System (NRIS) under 85-2-112 ;

Suggested changes 85-2-112 directing the DNRC to establish a Water Data Management System are:

The department shall:

~~(4) in cooperation with other state agencies, institutions, colleges, and universities, establish and maintain a centralized and efficient water resources data management system sufficient to make available and readily accessible, in a usable format, to state agencies and other interested persons, information on the state's water resources, out-of-state water resources that affect the state, existing and potential uses, and existing and potential demand. All other state agencies, institutions, and colleges and universities shall cooperate with the department in the development and maintenance of this system.~~

Suggested changes to NRIS Legislation:

90-15 Part 3, MCA:

90-15-301. Establishment of information system. (1) The library, in consultation with the committee, shall establish a planning framework for the implementation of a natural resource information system and shall begin implementation of the plan. This system is to be a comprehensive program for the acquisition, storage, and retrieval of existing data relating to the natural resources of Montana shall be comprised of a Natural Heritage Program and a Water Information System.

(2) The library shall give attention to the factors listed in 90-15-201 and shall prepare any legislation necessary to implement the system.

(3) It is not intended that the system shall require fieldwork to produce data. The system is intended to facilitate the management of data collected by state agencies in the normal course of their operations.

90-15-302. Natural heritage program. (1) There is a Montana natural heritage program to be operated by the library. In order to establish the program, the library may contract with an independent contractor or may employ necessary staff. In order to minimize costs, the library or other state agencies may make available state resources and facilities to an independent contractor as part of a contract for services.

(2) The Montana natural heritage program shall be designed to be compatible with similar programs in other states. This program is to be an initial step in the formulation of the comprehensive natural resource information system referred to in 90-15-301 and is to be considered a part of the system.

90-15-303. Water Information System. (1) There is a Montana water information system to be operated within the natural resource information system referred to in 90-15-301 and is to be considered a part of the system.

(2) The Montana water information system shall make available and readily accessible, in a usable format, to state agencies and other interested persons, information on the state's water resources, out-of-state water resources that affect the state, existing and potential uses, and existing and potential demand.

~~90-15-303~~. 90-15-304. Interagency cooperation. (1) State agencies shall cooperate with the library and the committee in the planning of the natural resource information system.

(2) Within the limits of available resources, state agencies shall provide data requested by the library for purposes of the Montana natural resource information system and natural heritage program. If an agency does not possess requested data or is unable to locate requested data, the agency shall inform the library. It is not necessary for an agency to conduct fieldwork or literature searches to obtain requested data.

~~90-15-304.~~ 90-15-305. Availability of information. (1) Except as provided in subsection (3), the library shall make information from the natural resource information system available to local, state, and federal agencies and to the general public.

(2) The library may establish a fee system for information requests in order to cover the costs of providing requested information.

(3) If necessary, the library shall establish procedures to protect confidential information in the possession of state agencies.

APPENDIX 4

Montana Fish, Wildlife & Parks

P.O. Box 200701
Helena, MT 59620-0701
November 29, 1996

Environmental Quality Council
Department of Natural Resources and Conservation
Fish, Wild and Parks Commission

Ladies and Gentlemen:

Enclosed is the 1996 annual progress report for the Water Leasing Study as required in 85-2-436, MCA. If you have any questions, please contact me at the above address or at 444-3888.

Sincerely,

Liter Spence

Liter Spence
Water Resources Supervisor
Fisheries Division

RECEIVED
DEC 02 1996
ENVIRONMENTAL
COUNCIL

ANNUAL PROGRESS REPORT
WATER LEASING STUDY

1996

RECEIVED
DEC 02 1996
ENVIRONMENTAL
[illegible] COUNCIL

Submitted to:

Montana Environmental Quality Council
Montana Department of Natural Resources and Conservation
and
Montana Fish, Wildlife and Parks Commission

Submitted by:

Montana Fish, Wildlife and Parks
Fisheries Division

November 30, 1996

TABLE OF CONTENTS

Page

I. INTRODUCTION 1

II. SUMMARY 1

III. DESIGNATED STUDY STREAMS 2

IV. 1996 ACTIVITIES 3

- Leases Approved Under 85-2-436, MCA 3
- Water right Conversion Approved Under 85-2-439, MCA 3
- Leases Actively Pursued 4
- Other Investigations 5

V. REPORTING REQUIREMENTS FOR COMPLETED LEASES 5

VI. OTHER INVESTIGATIONS IN 1996 10

VII. APPENDICES 12

- Appendix A - Monitoring Plans For Leases Approved in 1996 12
- Appendix B - Features and Costs of Approved Water Leases 14

I. INTRODUCTION

This is the seventh annual report prepared by Montana Fish, Wildlife and Parks (FWP) in response to the reporting requirement under 85-2-436(3)(a) MCA. Two (2) new water leases were given final approval during 1996, bringing the total to nine (9) leases that have been approved under this section since the Water Leasing Study was authorized by the 1989 Legislature. In addition, FWP converted portions of some of its own water rights to instream flow on one stream under 85-2-439, MCA, authorized by the 1995 Legislature. There are no reporting requirements for FWP under this section but this conversion is summarized in this report to keep the results of FWP's leasing projects in one place.

II. SUMMARY

Water leasing activities and accomplishments in 1996 were the following:

1. Completed lease agreement and received final DNRC approval for a water lease on Chamberlain Creek, an important cutthroat trout stream that is tributary to the Blackfoot River near Ovando.

2. Completed lease agreement and received final DNRC approval for a water lease on Pearson Creek, an important cutthroat trout stream tributary to Chamberlain Creek in the Blackfoot River basin near Ovando.

3. Completed the fourth year of implementing two water leases of existing water rights on Mill Creek, a Yellowstone River spawning tributary near Pray. Also, completed the first year of a third water lease on this stream.

4. Completed the third year of implementing a water lease on Blanchard Creek, a Blackfoot River spawning tributary near Ovando.

5. Continued the process of investigating new water leases on: Rattlesnake Creek, a tributary to the Clark Fork River near Missoula; Rock Creek, in the Blackfoot River drainage near Ovando; and Mol Heron Creek in the upper Yellowstone River drainage.

6. Began investigating another possible water lease on Tin Cup Creek, a Bitterroot River tributary, near Darby.

7. Received final DNRC approval to convert portions of FWP's existing water rights on Cottonwood Creek, a tributary to the Blackfoot River that flows through the Blackfoot-Clearwater Wildlife Management Area (WMA) near Ovando

8. Investigated eight leasing inquiries that proved to be infeasible or are being pursued to obtain initial information as to their suitability for leasing.

III. DESIGNATED STUDY STREAMS

When the water leasing study legislation was approved in 1989, FWP was required to receive approval of the Board of Natural Resources and Conservation (BNRC) to study a stream for leasing. As of July 1, 1995, the BNRC no longer exists and this duty is now the function of the Department of Natural Resources and Conservation (DNRC). The following is a list of the streams approved to date, the approving authority and date of approval. Current law allows no more than 20 streams to be approved for water leasing.

1. Swamp Creek (Big Hole R.drainage); BNRC; March 5, 1990
2. Big Creek (Yellowstone R. drainage); BNRC; March 5, 1990
3. Mill Creek (Yellowstone R. drainage); BNRC; November 9, 1990
4. Cedar Creek (Yellowstone R. Drainage; BNRC; January 6, 1992
5. Blanchard Creek (Blackfoot R. drainage); BNRC; September 25, 1992
6. Hells Canyon Creek (Jefferson R. drainage); BNRC; September 25, 1992
7. Tin Cup Creek (Bitterroot R. drainage); BNRC; October 30, 1992
8. Rattlesnake Creek (Clark Fork R. drainage); BNRC; May 25, 1995
9. Mol Heron Creek (Yellowstone R. drainage); DNRC; November 28, 1995
10. Rock Creek (Blackfoot R. drainage); DNRC; November 28, 1995
11. Chamberlain Creek (Blackfoot R. drainage); DNRC; January 3, 1996
12. Pearson Creek (Blackfoot R. drainage); DNRC; January 3, 1996

Leases have been given final DNRC approval on all but four (4) of the designated streams: Swamp Creek., Big Creek, Rattlesnake Creek and Rock Creek. FWP and the potential lessor on Swamp Creek could not reach agreement on a price for the lease. The Big Creek water users are still studying the feasibility of converting from flood to sprinkler irrigation. Discussions with the potential lessor on Rattlesnake Creek are not proceeding very rapidly. Negotiations with the potential lessor on Rock Creek are in progress.

IV. 1996 ACTIVITIES

LEASES APPROVED UNDER 85-2-436, MCA

Two (2) new water leases were given final approval by DNRC in 1996:

1. Chamberlain Creek
2. Pearson Creek

Chamberlain Creek is a southern tributary entering the Blackfoot River about 10 miles west of Ovando. Pearson Creek is a tributary to Chamberlain Creek. These two streams are important Westslope cutthroat trout streams in the Blackfoot drainage. There is one water right on Chamberlain Creek which is split between two parties. Half of the right has historically been diverted by one party into the Pearson Creek basin for irrigation purposes. The other half is used by the other party in Chamberlain Creek for irrigation. With leasing, the portion of the right used in Pearson Creek will no longer be diverted into this basin but will remain in Chamberlain Creek for fishery purposes.

FWP recently completed stream restoration projects on both streams to improve the physical habitat for fish. The water leases complement these projects for the benefit of the fisheries.

WATER RIGHT CONVERSION APPROVED UNDER 85-2-439, MCA

Cottonwood Creek

FWP converted the salvaged portion of some of its existing irrigation rights on Cottonwood Creek to instream flow under the provisions of SB144 (85-2-439, MCA), approved by the 1995 legislature, that authorized the upper Clark Fork River basin instream flow pilot program. This program allows a water right holder to temporarily convert water rights to instream flow after approval by DNRC.

Cottonwood Creek is a northern tributary to the Blackfoot River about 10 miles west of Ovando. It flows through FWP's Blackfoot-Clearwater WMA and is an important spawning stream for brown and bull trout. It also has an important Westslope cutthroat trout population in its upstream reaches.

When FWP purchased the Dreyer Ranch in 1989 as an addition to the WMA, the public showed a strong interest in maintaining agricultural operations on the property, believing, rightly so, that the ranch's strong wildlife values were, in part, a byproduct of irrigated agriculture and that continued agricultural operations would help control an ongoing weed problem.

With the purchase of the Dreyer Ranch, FWP holds the three earliest irrigation rights on Cottonwood Creek, which are all diverted at the Dreyer Ditch. FWP has improved the irrigation system through ditch lining that will require less water to be diverted from the creek and improve flows in a two-mile reach of stream that normally goes dry during the irrigation season.

A chronology of the events that led to implementation of the leases on Chamberlain and Pearson creeks and the water rights conversion on Cottonwood Creek is given in Part V of this report.

LEASES ACTIVELY PURSUED

(All of the following streams are approved for water leasing study by the BNRC or DNRC.)

1. Rattlesnake Creek

Rattlesnake Creek is a tributary to the Clark Fork River near Missoula. Mountain Water Company, operator of Missoula's municipal water supply, holds several early water rights in the Rattlesnake Creek drainage. Due to *Giardia* problems with the creek's water, the city developed wells to replace the surface water supply. However, the creek remains as an alternate source of supply if wells become inoperable or in the event that water treatment facilities are constructed to handle the *Giardia* problem. Presently, flows in the lower creek are sufficient to protect aquatic life. However, this condition could change if the municipal rights are exercised or converted to other consumptive uses.

FWP is investigating the potential to lease all municipal rights held by the company, with the intent to ensure that these rights remain instream in Rattlesnake Creek to maintain the fishery for a 10-year period. In conjunction with leasing, FWP is investigating the possibility of installing a fish ladder on the municipal diversion dam located about 2.5 miles above the mouth, which is presently impassable to fish. Discussions with the company have been slow.

2. Rock Creek

Rock Creek is a tributary to the North Fork of the Blackfoot River about five miles east of Ovando. Because of its importance as a potential spawning tributary for brown and bull trout, FWP and other interests completed a stream restoration project to improve the physical habitat for fish in a portion of the stream. As part of the restoration, about ½ mile of stream channel was reopened to water flow and the former irrigation system was improved to increase its efficiency. Some of the water previously used for irrigation has been salvaged and would be used to improve flows in about 3/4 mile of stream. FWP proposes to lease the salvaged water for fisheries. Discussions were continued with the water right holder.

3. Mol Heron Creek

Mol Heron Creek is an important Yellowstone cutthroat trout spawning tributary to the Yellowstone River near Gardiner. FWP has the opportunity to enter into a water lease agreement with the Church Universal and Triumphant (Church) to improve instream flows in the lower half-mile of stream. The stream has chronic low flow problems in most years due to irrigation withdrawals by the Church.

FWP is investigating the lease of salvaged water in Mol Heron Creek. About ½ mile above the mouth, there is a large diversion dam used to divert irrigation water to lands along the Yellowstone River. This diversion is at least a partial blockage to upstream cutthroat trout migration and also captures young cutthroat migrating downstream to the Yellowstone River, reducing a source of recruitment to the river fishery. The Church will replace its existing flood irrigation system with a more efficient sprinkler irrigation system that will allow some water to be salvaged. The possibility of leasing the salvaged water is being investigated. The intent of the lease is to ensure that the salvaged water remains instream to the mouth of the creek to improve the reproductive capacity of the stream and enhance the important cutthroat fishery in the Yellowstone River.

In conjunction with water leasing, a new "fish friendly' diversion would be installed at the existing diversion to improve both upstream and downstream fish migration.

OTHER INVESTIGATIONS

Eight (8) other potential leasing opportunities were investigated. Some were not further pursued for reasons described in Part VI of this report. Others are still being pursued to obtain initial information to determine their suitability for leasing.

V. REPORTING REQUIREMENTS FOR COMPLETED LEASES

Section 85-2-436 (3)(a) requires that an annual leasing progress report contain specific information on each pilot lease entered into during the report period. The following information, listed under 85-2-436(1)(a) and (b), is provided below for the two new leases (Chamberlain and Pearson creeks) completed in 1996:

(a) provide the following data for each designated stream reach and each pilot lease entered into under subsection (2):

(i) the length of the stream reach and how it is determined;

(ii) technical methods and data used to determine critical stream flow or volume needed to preserve fisheries;

(iii) legal standards and technical data used to determine and substantiate the amount of water available for instream flows through leasing of existing rights;

(iv) contractual parameters, conditions, and other steps taken to ensure that each lease in no way harms other appropriators, particularly if the stream is one that experiences natural dewatering; and

(v) methods and technical means used to monitor use of water under each lease;

(b) based on the data provided under subsection (1)(a), develops a complete model of a water lease and lease authorization that includes a step-by-step explanation of the process from initiation to completion.

(I) Length of stream reach

Chamberlain Creek - The affected reach, which is about 1.7 miles long, extends from the previous diversion to the creek's confluence with the Blackfoot River.

Pearson Creek - The affected reach extends about 1.3 miles from the previous diversion to the creek's confluence with Chamberlain Creek.

(ii) Technical methods to determine critical streamflow

The amount of flow being leased for Chamberlain Creek is ½ the flow of the stream up to 25 cfs and is the amount that was available for leasing. It is less than the desired flow needed to fully protect the stream resources, but is deemed sufficient to have significant fishery benefits. One other water user has the other half of the water right up to 25 cfs.

The amount of flow leased on Pearson Creek is the total amount of the single water right on the stream, up to 8 cfs. With the reconstructed channel, this flow is adequate to fully protect this streams' fishery resource.

(iii) Legal standards

An extensive package of information was assembled and used to determine the amount of water available for instream flows for the two leases. This included:

1. The amounts of the rights claimed under SB76 or previously decreed;
2. An evaluation of historic irrigation practices on the two creeks and the use of the rights under investigation on the affected lands;
3. An analysis of irrigation return flows;

4. An evaluation of other water uses, including diversion locations and the amounts and priority dates of their claimed rights; and

5. An evaluation of in-channel water losses.

This and other information is discussed in FWP's "change" application for each of the two leases.

(iv) Steps to insure non-injury to other users

Various steps incorporated in the leasing process ensure non-injury to other water users. These include:

1. Water users who could be potentially injured have the opportunity to voice their concerns when a lease agreement is brought before the Fish, Wildlife and Parks Commission for approval.

2. FWP, or its contractor, conducted hydrologic analyses to determine the leases' effects on other users. The analyses showed that these effects were nonexistent or negligible for the two leases.

3. The DNRC administrative "change" process provides an opportunity for individuals potentially injured by a proposed lease to object and resolve their concerns before a "change" is granted. However, there is only one other water user on Chamberlain Creek downstream from the former diversion point and this individual would not be affected by the lease. There are no other water users on Pearson Creek. Thus, the DNRC chose to waive public notice of the two water right changes.

(v) Means used to monitor water

The monitoring plans for the two leases are presented in Appendix A.

b. Water leasing model

The following provides a chronological documentation of the principal events that led to the completion of the two leases. The two streams are combined in this chronology because the leases were with the same individual and proceeded through the process at the same time.

Chamberlain/Pearson Creeks Leasing Chronology

July 21, 1995	FWP personnel meet with Heart Bar Heart Ranch Partnership personnel to discuss leasing opportunities and tour potential lease sites.
July 26, 1995	FWP requests FWP Commission approval of the two streams for water leasing study.
August 4, 1995	Chamberlain and Pearson creeks were approved by the FWP Commission as pilot leasing study streams.
September 20, 1995	FWP personnel again tour the lease sites on Pearson and Chamberlain creeks.
October 20, 1995	First draft of leasing agreement completed by FWP and sent to Heart Bar Heart for review.
November 14, 1995	BLM provides FWP with hydrologic analysis for Chamberlain Creek.
November 16, 1996	FWP completes "change" application and sends to lessor for review.
November 28, 1996	FWP sends letter to State Historic Preservation Office requesting analysis of projects' potential impacts on historic sites.
November 30, 1995	FWP submits Chamberlain/Pearson creeks to DNRC for approval as pilot leasing study streams.
December 1, 1995	Heart Bar Heart Ranch provides lease and "change" application corrections to FWP.
December 1, 1995	"Change" application completed and sent to DNRC for processing.
December 4, 1995	State Historic Preservation Office responds to FWP's request. The leasing project will not affect historic sites.
January 3, 1996	DNRC approves Chamberlain and Pearson creeks as the 11th and 12th pilot leasing study streams.
January 30, 1996	Final leasing agreement sent to Heart Bar Heart for signing.
January 31, 1996	Chamberlain/Pearson leasing EA sent out for public comment.
March 4, 1996	EA deadline passes with one comment from the public.

March 6, 1996	Leasing agreement signed by Heart Bar Heart.
March 13, 1996	EA Decision Notice is prepared and mailed.
March 19, 1996	Leasing agreement signed by FWP.
March 25, 1996	Letter sent to Heart Bar Heart, notifying them that lease approval, except for "change", was complete.
July 3, 1996	FWP meets with DNRC in Helena to discuss unresolved issues with the"change" application.
October 18, 1996	DNRC approves "change" application and issues "change" authorization to FWP.
October 31, 1996	FWP notifies Heart Bar Heart of DNRC approval of "change", thus completing the approval process.

Cottonwood Creek Chronology

August, 1993.	FWP pursues funding to line a ditch on the Blackfoot-Clearwater WMA, thereby salvaging water that could be available for instream flows in Cottonwood Creek.
August, 1993.	Report by Land and Water Consulting, Inc., Missoula, on Cottonwood Creek entitled "Water rights, irrigation and fish friendly diversion alternatives".
March 10, 1994.	FWP's Fisheries Division Administrator approves proposal to seek a salvaged water lease on Cottonwood Creek.
March 7, 1995.	FWP personnel and engineering consultant meet to begin gathering information for the leasing process.
March 14, 1995.	Draft pilot water leasing study report prepared by FWP and sent to FWP's Region 2 for review.
April 7, 1995.	Cottonwood Creek leasing study report presented to FWP Commission for approval. Commission approves stream for leasing study.
April 14, 1995.	SB144 by 1995 legislature becomes effective, allowing water right holder to temporarily convert diversionary water rights to instream flow.

May, 1995.	FWP decides to pursue Cottonwood "lease" under provisions of SB144 rather than under 85-2-436, MCA, the water leasing study.
September 20, 1995.	FWP personnel visit site to gather information.
December 1, 1995.	FWP and USGS personnel visit lease site to collect flow and channel morphology data for use in the "change" application.
February 14, 1996.	FWP submits "Change in Appropriation Water Right" application to DNRC for approval to convert water rights to instream flow.
March, 1996.	Draft Environmental Assessment (EA) completed and sent to FWP's Region 2 fisheries personnel for review.
May 14, 1996.	EA sent out for public review and comment.
June 15, 1996.	EA deadline for comment passes with one public comment received.
July 3, 1996.	FWP meets with DNRC water rights personnel in Helena to discuss unresolved issues with the "change" application.
July 9, 1996.	FWP submits information to DNRC to resolve "change" issues.
July 12, 1996.	EA Notice of Decision completed after the one public comment is resolved.
August 26, 1996.	DNRC contacts FWP to approve DNRC modifications to "change" application.
October 18, 1996.	DNRC approves "change" application and issues Authorization to Change Appropriation Water Right certificate to FWP, completing the process.

VI. OTHER INVESTIGATIONS IN 1996

Eight (8) other potential opportunities for water leasing were investigated. Some were not pursued further for reasons that are described in Part VI of this report. Others are being pursued to obtain initial information as to their suitability for leasing. Leasing offers were investigated on the following waters, some of which are already approved for water leasing:

1. Frazier Creek, tributary to Flathead Creek (Shields R. drainage)*
2. Rattlesnake Creek near Missoula*

3. North Fork Blackfoot River
4. Dearborn River
5. O'Dell Creek (Red Rock R. drainage)
6. Mill Creek (Yellowstone R. drainage)
7. Mill Creek (Yellowstone R. drainage)
8. Tin Cup Creek (Bitterroot R. drainage)

The items marked with (*) were not pursued for a number of reasons, including:

1. The flow amount offered for leasing was too small to make a difference;
2. the stream did not have a dewatering problem;
3. the fishery benefits were judged too insignificant to justify a lease;
4. the stream was embroiled in water right controversy that would greatly hamper lease implementation;
5. the right holders withdrew their offer when made aware of the leasing process and anticipated time frames.

The remaining offers are being pursued to obtain initial information as to their suitability.

A summary of the features and costs of the water leases that have been approved to date under the water leasing study is given in Appendix B.

NOTE: FWP's water rights' conversion on Cottonwood Creek is also included in Appendix B.

VII. APPENDICES

APPENDIX A

WATER LEASE MONITORING PLAN - CHAMBERLAIN AND PEARSON CREEKS

Two components comprise the instream flow monitoring plan for the leases on Chamberlain and Pearson creeks: A) a stream gauge to monitor flows and B) an administration program to ensure that the leased instream flow is maintained.

A) Stream Gauge

A staff gauge will be established at the one other water users diversion point on Chamberlain Creek to assist with the distribution of stream flow, ½ of which can be diverted by the other user. A control structure has already been placed at the head of this diversion to further aid with flow distribution.

Because the lessor is the only water user on Pearson Creek, no gauges are planned for this site.

B) Administration

FWP will primarily rely on Heart Bar Heart Ranch personnel to monitor instream flows. Personnel of FWP will be available to periodically check the gauge and measure flows to ensure an even flow distribution between the two Chamberlain Creek water users.

MONITORING PLAN - COTTONWOOD CREEK

Two components comprise the flow monitoring plan: A) gauges to monitor flows and B) an administration program to ensure the instream flow is maintained.

A) Gauges

FWP will establish two staff gauges; one immediately downstream from the Dreyer Diversion to monitor flows in Cottonwood Creek and the other at or near the head of the Dreyer Diversion to monitor FWP's water withdrawals. Installation of the staff gauges and the development of rating curves could be contracted to the USGS, depending on availability of funding. If funds are not available; FWP will install and rate the gauges.

B) Administration

FWP will primarily rely on its agricultural lessee on the WMA to administer water withdrawals at the Dreyer Diversion and to monitor flows in Cottonwood Creek. Personnel of FWP will be available to periodically measure flows to check the gauge's accuracy.

A comprehensive flow monitoring program for Cottonwood Creek is not essential to implement this change because there are no diversions within the approximate 2-mile-long reach where FWP intends to protect its salvaged water. In the unlikely event that new diversions are approved, FWP will then develop a more comprehensive flow monitoring plan for Cottonwood Creek.

leaserpt.96

APPENDIX B

Features and Costs of Approved Water Leases

SOURCE	LESSOR	TERM OF LEASE	PRIORITY OF RIGHT	QUANTITY LEASED	PERIOD OF USE	COST
Mill Creek	Mill Creek Water and Sewer District	10 years	95 right with various priorities	Up to 65 cfs	48-60 hours in Aug. Diversion shut off after 10-day notice from FWP	$12, 750 per year[1]
Mill Creek	Individual	10 years	June 30, 1880; June 1, 1903	2.0 cfs (1880) and 4.13 cfs (1903) (salvaged water)	May 1 -October 4	$7,500 per year
Blanchard Creek	Individual	5 years	May 11, 1913 (first right on stream)	3.0 cfs	April 15 -October 15	Up to $2,000 per year
Tin Cup Creek	Six Individuals	5 years	August 1, 1883 (first right on stream)	2.28 cfs April 1-April 14 4.32 cfs April 15-April 30 4.72 cfs May 1-October 19 1.8 cfs October 20-November 4	April 1- November 4	$6,260 per year
Cedar Creek	US Forest Service	10 years	April 1, 1890, April 1, 1893, April 1898, April 1, 1904, April 7, 1972 (high water rights only)	6.77 cfs May 1-July 15[2] 6.39 cfs July 16-July 31 9.64 cfs August 1-August 31 6.39 cfs Sept 1 - October 15	May 1-October 15	$1.00 per year
Hells Canyon Creek	Three Individuals	20 years	December 31, 1884 (first right on stream), August 23, 1889, August 29, 1912	1.12 cfs (salvaged water)	April 1- November 4	$25,000 - One-time payment
Mill Creek	Individual	10 years	June 1, 1891	2.64 cfs (salvaged water)	May 1-October 19	$4,200 per year
Chamberlain Creek	Individual	10 years	October 10, 1911	½ the flow up to 25 cfs	April 1 - October 31	$1.00 per year
Pearson Creek	Individual	10 years	October 10, 1911	Up to 8 cfs	April 1 - October 31	$1.00 per year
Cottonwood Creek	FWP[3]	9 years	May 1, 1884	14.0 cfs April , 37.0 cfs May 1-June 30, 32.0 cfs July, 9.0 cfs August, 6.0 cfs Sept, 9.0 cfs Oct, 8.0 cfs November (salvaged water)	April 1- November 4	None

---

[1] Lessor pays for water commissioner and the installation of measuring devices on all on-farm turnouts from the pipeline.

[2] These rights are used to maintain a flow of 1.3 cfs at the mouth of Cedar Creek, eliminating effects on other water users.

[3] FWP converted its own water rights to instream flow under 85-2-439, MCA.

APPENDIX 5

The
Montana
Consensus
Council

Building
Agreement
on
Natural
Resources

Office
of the
Governor

State Capitol
Helena, MT
59620-0801

(406) 444-2075
FAX: 444-5529

MEMORANDUM

TO: Members, Environmental Quality Council
Water Resources Division, DNRC

FROM: Matt McKinney for HB 472 Instream Flow Working Group

SUBJECT: Update on HB 472 Activity

DATE: November 4, 1996

Introduction

The HB 472 Instream Flow Working Group, which was appointed by Governor Racicot pursuant to HB 472, met via conference call on October 31, 1996. This memorandum summarizes the highlights on that conversation.

Accomplishments to Date

- Trout Unlimited should complete the first lease agreement and change of water use under HB 472 by the end of 1996. TU is working with seven landowners to lease water rights on Rock Creek, a tributary of Ninemile Creek (which is a tributatary of the Clark Fork River), to support spawning and rearing habitat for cutthroat trout. As part of this initiative, TU is working with the Department of Fish, Wildlife, and Parks to restore fisheries habitat on Rock Creek.

- TU will pursue a lease this winter on a tributary of the Yellowstone River below Livingston. This opportunity is designed to enhance Yellowstone cutthroat trout.

- TU has interviewed biologists, screened leasing possibilities in several watersheds, and developed a flow chart for use by the organization to evaluate future leasing opportunities.

- TU has also examined one leasing opportunity in the Bitterroot River drainage and two in the upper Clark Fork River watershed. In these cases, water right holders were interested in leasing water rights that were either too junior in priority to do much good, or to which they did not have a clear right to use. Based on this experience, TU suggests that we need to make it clear to water right holders that people are not going to lease water rights that are not worth anything.

- The participants in the working group have published articles in their organizational newsletters explaining the leasing program.

- The participants also jointly produced and published, with the assistance of the Department of Natural Resources and Conservation, a brochure that more fully explains the Instream flow leasing program authorized by HB 472.

- The agricultural organizations have not heard any negative feedback about the leasing program.

Suggestions to Improve the Possibility of Leasing Water Rights for Fishery Resources

- Highlight the success of the first lease through newspapers and other media.

- Provide more education within the water community on the opportunity to lease water rights to benefit fisheries. Distribute additional brochures to water attorneys, the regional offices of the Water Resources Division, conservation districts, and agricultural groups. The Consensus Council will talk with the Water Resources Division about producing some additional brochures.

- Identify target watersheds and priority tributaries or stream reaches. TU has agreed to produce such a list. Participants from the agricultural groups will distribute the list and talk with members about their interest in leasing water rights to protect fishery resources.

- Limit, if possible, the number of landowners you work with to lease water rights.

- As a general observation, TU indicates that the process of changing the use of water rights appears to be more of a problem to leasing water rights than finding willing water right holders or raising money to lease water rights. The amount of information needed to process the lease agreement and "change application" forced TU to hire legal and technical consultants in the Rock Creek lease to (1) document that the 1.28 cfs is available to lease; (2) prepare a leasing contract; and (3) prepare a legal notice to notify other water right holders of the proposed lease. TU also consulted with the Department of Fish, Wildlife, and Parks to document the benefit of instream flows to the fishery resource. Finally, TU is required by the Department of Natural Resources and Conservation to install a gauge to measure the 1.28 cfs on a stream where nobody objects to the lease and where the lease will not adversely affect any downstream water users.

  Besides taking time, all of these required steps meant that TU had to spend scarce funds on paper, lawyers, and technicians, when it would prefer to use the money to actually lease water rights. While these steps may be appropriate in more complicated situations, they create a set of disincentives to leasing in simpler situations.

  In short, *TU would like to search for ways to streamline the leasing and the change of use process, particularly when you have willing water right holders and not objectors (as in the case of the lease on Rock Creek).*

Legislative and Other Activity

All of the participants confirmed that their organizations are not proposing or working on any legislative or other initiatives to address the issue of instream flow protection.

TU did indicate that it is interested, at some point in the future, in exploring the possibility of a tax credit for individuals that lease water to protect the fishery resource.

For More Information

For more information on the status and prospects of leasing water rights to benefit fisheries, please contact a member of the HB 472 Instream Flow Working Group or the Montana Consensus Council.

Attachments

- List of Members, HB 472 Instream Flow Working Group
- Brochure on "Leasing Water Rights to Benefit Fisheries"

HB 472 Instream Flow Working Group

John Bloomquist
Montana Stockgrowers Assoc.
P.O. Box 1185
Helena, MT 59601
443-7018

Bruce Farling
Montana Trout Unlimited
Box 7186
Missoula, MT 59807
543-0054

Bob Hansen
Montana Farm Bureau
3718 Highway 12
White Sulphur Springs, MT 59645
547-3482

Glenn Marx
Office of the Governor
State Capitol
Helena, MT 59620
444-3111

Mike Murphy
Montana Water Resources Assoc.
P.O. Box 4927
Helena, MT 59604
458-6487

Jim Richard
Montana Wildlife Federation
P.O. Box 508
White Sulphur Springs, MT 59645
547-2289

Alan Rollo
Montana Wildlife Federation
808 52nd St. South
Great Falls, MT 59405
727-4437

Mike Volesky
Montana Assoc. of Conservation Districts
501 N. Sanders #2
Helena, MT 59601
443-5711

Other Conditions

- An instream flow lease under this program may be issued for no more than 10 years, and it may be renewed.
- Any water right holder that may be adversely affected by an instream flow lease may object:
  - During the initial change-of-use process;
  - Once during the term of the lease; and
  - At the time the lease is renewed.
- The Department of Natural Resources and Conservation must approve the method of measuring the water left instream.
- Only the owner of the water right may seek enforcement of the temporary change.
- A temporary change in the use of a water right under this program does not create a right of access across private property or allow any infringement of private property rights.
- This legislation sunsets on June 30, 2005. Any leases in effect prior to this date will remain valid until the term of the lease expires.

For More Information

Department of Natural Resources
and Conservation
Water Resources Division
P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6610

Montana Stockgrowers Association
420 N. California
Helena, MT 59601
(406) 442-3420

Montana Farm Bureau Federation
502 S. 19th Avenue
Bozeman, MT 59715
(406) 587-3153

Montana Water Resources Association
P.O. Box 4927
Helena, MT 59604
(406) 458-6487

Montana Association of Conservation Districts
501 N. Sanders
Helena, MT 59601
(406) 443-5711

Montana Wildlife Federation
P.O. Box 1175
Helena,, MT 59624
(406) 449-7604

Montana Council of Trout Unlimited
P.O. Box 7186
Missoula, MT 59807
(406) 543-0054

This publication is made possible by the Department of Natural Resources and Conservation.

Leasing Water Rights to Benefit Fisheries

Building Private Partnerships for Montana's Fish

Produced by:

Montana Stockgrowers Association

Montana Farm Bureau Federation

Montana Water Resources Association

Montana Association of Conservation Districts

Montana Wildlife Federation

Montana Trout Unlimited

Montana Consensus Council

Introduction

In 1995, the Montana Legislature passed a law that clears the way for all water users to help protect the state's fisheries. House Bill 472 allows persons who own water rights to temporarily change the use of that water and to leave it in the stream to benefit the fishery.

The law also allows people to voluntarily agree to lease their water rights to others, who then use it to maintain or enhance instream flows to protect the fishery. Under HB 472, any individual, association, partnership, or corporation may lease water for this purpose.

HB 472 complements a separate program that allows the Montana Department of Fish, Wildlife and Parks to lease water for instream flows.

Safeguards

HB 472 was jointly developed by representatives from the agricultural, recreation, and conservation communities. They worked long and hard to ensure that the new law would preserve existing water rights while still providing an effective tool for enhancing instream flows.

To reach that goal, the law emphasizes four key points:

- Any changes or leasing of existing rights must be voluntary.
- The changes and leases are temporary.
- The changes or leases will be approved only if other water rights are not adversely affected.
- Public entities (such as government agencies) cannot lease water rights under HB 472.

Requirements

To lease instream flows, the interested person must apply for a change of use through the Department of Natural Resources and Conservation. This process is outlined in Sections 85-2-402 and 85-2-407 of the Montana Water Use Act.

In addition to the standard requirements for changing the use of a water right, an applicant must:

- Show that the temporary change will not adversely affect the water rights of other persons;
- Show that the water is needed to maintain or enhance instream flows to benefit the fishery resource; and
- Attempt to consult with individuals and groups that may be affected by the temporary change prior to submitting an application.

Leasing Water Rights

50 copies of this public document were published at an estimated cost of $2.50 per copy, for a total cost of $125.00, which includes $125.00 for printing and $.00 for distribution.